

Appl. No. 09/674,347  
Amdt. dated Dec. 6, 2005  
Reply to final Office Action of Sept. 21, 2005

REMARKS

In view of both the amendments presented above and the following discussion, the Applicants submit that none of the claims now pending in the application is anticipated under the provisions of 35 USC § 102 or obvious under the provisions of 35 USC § 103. Thus, the Applicants believe that all of these claims are now in allowable form.

If, however, the Examiner believes that any unresolved issues exist in any of the pending claims thus necessitating a continuance of the final action, the Examiner should quickly telephone Mr. Peter L. Michaelson, Esq. at (732) 530-6671 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Interview Summary

Commencing at approximately 10 AM on December 1, 2005, the undersigned along with the assignee's Dutch patent attorney, Mr. Romano Beitsma, conducted a telephone interview with the Examiner. The purpose of the interview was to discuss the pending prior art rejections and also gain clarification from the Examiner on her view of both the term "set" and the variable "m" as expressed in paragraphs 2 and 5 of the Final Office Action. The term "set" appeared in now canceled claim 7.

During the interview, the Applicants' representatives, after summarizing the salient teachings of the references (the Corneliusen '672 and Saari et al '046 patents) and the present invention, explained to the Examiner that the term "set", as used in the present specification, means "predefined" or "fixed".

The Examiner indicated that she interpreted the term "set" differently from that of the Applicants. Specifically, to her the term meant "established" which, in the context of variable N as recited in claim 7 with respect to the number of received or transmitted packets that belong to a connection, meant that the number of those packets was established at a point in time. To the Examiner, that time point was at the end of an interval  $T_{tot}$  -- as taught by the Corneliusen '672 patent.

In contrast to the Examiner's view, the representatives stated that "set" did not mean just "established" but rather, when used in the context of variable N and measurement interval t as recited in the present application including claim 7 thereof, that the value of variable N, i.e., the number of such packets, is known prior to the commencing of the interval t, i.e., as specifically stated in the specification, "fixed".

The representatives also stated that variable "m", as expressed in the formula provided in col. 3, line 51 et seq of the '672 patent, was specifically recited and defined by the patentee as merely being "the

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number of arrived packets starting with the first packet as 0" that occurred during time period  $T_{tot}$ . In contrast to the Examiner's view, the representatives stated that variable "m" was not predefined, fixed, or "set" as the Applicants use that term, for the simple reason that the number of packets that will arrive during a measurement interval is unknown until the point in time occurs at which that interval actually concludes and a packet arrival counter has stopped. It is only then, i.e., after the fact but not before, that "m" takes on a specific value which, from the Applicants' perspective, it then becomes "set".

The Examiner agreed with the view expressed by the Applicants' representatives that the '672 patent does not show the concept of fixing m prior to the commencement of the measuring interval. The Applicants, in contrast, teach the concept of fixing the number of ATM packets (N), prior to a measuring interval, and measuring the time, i.e., the length of the interval, during which that specific number of packets is then carried over an ATM communication channel -- a concept which the Examiner agreed is not taught or disclosed in the '672 patent.

The Examiner requested that the undersigned file a written response, i.e., an amendment after final, that recites the Applicants' arguments, as summarized above, so she may consider those arguments further. This response is the result. The Examiner agreed to promptly consider that response.

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Both of the Applicants' representatives sincerely thank the Examiner for the opportunity to have conducted the interview and the courtesies she graciously extended to them not only in scheduling the interview but also during the interview itself.

Specification amendments

Various amendments have been made to the specification to correct minor inadvertent grammatical, punctuation and formal errors that remained in the specification.

Status of claims

To simplify consideration and entry of the claim amendments, the Applicants, rather than re-writing their claims -- particularly in light of the number of separate changes that would otherwise have needed to be made to those claims -- have simply canceled their existing claims and replaced them with new claims 14-20. The amendments, all of which are relatively minor, conform the claims to proper US claim practice.

New claims 14-20 correspond on a 1:1 basis with now canceled claims 7-13.

Rejections

A. Rejection under 35 USC § 102

The Examiner rejected claims 7, 8 and 11 under the provisions of 35 USC § 102(e) as being anticipated by the teachings of the Corneliusen patent (United States patent 6,819,672 issued to K. S. B. Corneliusen on Nov. 16, 2004). Though all these claims have now been canceled, the Applicants will discuss this rejection on the basis of new corresponding claims 14, 15 and 18 and principally in the context of new independent claim 14. In that context, this rejection is respectfully traversed. The following repeats and elaborates on the argument which was made to the Examiner during the interview.

The Examiner takes the view that the Corneliusen patent identically discloses all the elements recited in claims 7, 8 and 11. As the Examiner will soon appreciate, this view is incorrect, not only with respect to independent claim 7 (though now canceled) but also with respect to independent claim 14 (which, but for minor non-substantive differences, is essentially identical to claim 7).

In particular, the Corneliusen patent teaches a method for calculating duration of packet connections in connection-oriented and connection-less networks (the latter being typified by the Internet) in order to calculate a monetary charge for each such connection.

In essence and as described in col. 2, line 47 et seq and col. 3, line 40 et seq of this patent, this method involves measuring, through a first timer, the time ( $\Delta t_n$ ) between two successively arriving packets (packets n and n+1) and updating a second timer ( $T_{tot}$ ) with the value of  $\Delta t_n$  when each new packet (n+1) arrives. Hence, during an active connection, the second timer accumulates the total connection time,  $T_{tot}$ , between the first and last packets transmitted through a connection until that connection terminates. This concept is mathematically given by the equation shown in col. 3, line 51 et seq where m is the "number of arrived packets", i.e., the total packet count for the connection that occurred during time period  $T_{tot}$ . Hence, while the connection occurs, both the time and the packet count are measured and incrementally accumulated, with the final values of both variables then being defined ( $T_{tot}$  and m, respectively) only after all the packets have passed through the connection. In that regard, the specification explicitly states in col. 4, line 26 et seq:

"With this invention, the total time for a given connection is the time from the first to the last packet. At any point in time when the equipment is asked for the duration of the connection, the duration provides the time from the first to last packet."

Thus, as the Examiner can readily see, the technique taught by the Corneliusen patent basically relies on measuring: (a) the total time required for a packet connection, and (b) the total count of all the

packets carried through that connection, and then basing a connection charge thereon. Neither the arrived packet count nor the total connection time is predefined, fixed or set at the inception of a connection (here being the measurement interval), since, at that point in time, the values of both variables are simply unknown.

In sharp contrast with the technique taught by the Corneliusen patent, the present invention, which is particularly suited for determining a proper charge for a bursty network connection, does NOT rely on measuring either the time of the entire connection, i.e., from the time that connection started to the time it finished, or the total number of packets that transited end-to-end through that connection from start to finish. Rather, the present invention, through one of its two alternative inventive techniques, measures a duration of time required for a specific (i.e., "fixed") number of packets to be received or transmitted through the connection. The results are transmitted to a billing system for further processing which determines a suitable charge for the connection. To conserve transmission bandwidth, these results may be aggregated over multiple time durations (which each duration being determined by the passage of the fixed number of packets) prior to transmission to the billing system. See, e.g., page 6, line 11 et seq of the present specification which expressly states:

"...[I]t is conversely also possible to measure the duration of time between the reception or transmission of a specific number of data units."

and in page 8, line 17 et seq (as now amended) :

"A calculation device 4 calculates per connection a ratio between a number of arrived cells and a number of clock pulses and passes this ratio on to a billing system 5. According to the invention, this ratio is not calculated over the entire time that a connection is active but over smaller periods. There are therein two possibilities, viz. (per connection) starting from a fixed measurement period T and counting the number n of cells arriving in that period, wherein the ratio  $r = n/T$ , or starting from a fixed number of cells N and measuring the time t which is needed for the arriving of those cells, wherein  $r = N/t$ ."

As the Examiner readily acknowledged, the Corneliusen patent simply does NOT show, teach or even suggest the Applicants' concept of measuring a duration of time required for a fixed number of packets to be received or transmitted through a packet connection. In fact, this patent, by teaching that the time period for the entire connection is measured (however long that entire connection is from start to finish) along with counting all the packets (cells) that constituted that connection, teaches directly away from the present invention.

Claim 14 contains suitable limitations directed to this distinguishing aspect of the present invention. In that regard, this claim states as follows with those recitations being shown below in a bolded type:

"A system for charging, in a packet based telecommunication network, the packet load per connection, the system comprising a **measuring device**

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for measuring a time period (t) during which a predefined number (N) of packets that belong to a common connection are received or transmitted through the connection." [emphasis added]

Prior independent claim 7 (to which claim 14 now corresponds) recited the term "set" with respect to the number of packets N. Given that the present specification expressly defines that the number N of packets (cells) for a measurement duration t can be "fixed", the Applicants, to remove any residual ambiguity inherent in the word "set", have used the synonymous term "predefined" in claim 14 in lieu of "set".

Hence, the Applicants submit that claim 14 is not anticipated by the teachings of the Corneliusen patent. As such, this claim is patentable under the provisions of 35 USC § 102(e).

Each of dependent claims 15 and 18 depends, either directly or indirectly, from claim 14 and recites further distinguishing aspects of the present invention. Accordingly, the Applicants submit that neither of these dependent claims is anticipated by the teachings of the Corneliusen patent for the same exact reason given above with respect to claim 14. Consequently, both of these dependent claims are also patentable under the provisions of 35 USC § 102(e).

B. Rejection under 35 USC § 103

The Examiner rejected dependent claims 9, 10, 12 and 13 under the provisions of 35 USC § 103 as being obvious over the teachings of the Corneliusen patent taken in view of those in the Saari et al patent (United States patent 6,338,046 issued to J. I. Saari et al on Jan. 8, 2002). Though all these claims have also now been canceled, the Applicants will discuss this rejection on the basis of new corresponding dependent claims 16, 17, 19 and 20. In that context, this rejection is also respectfully traversed. The following repeats and elaborates on the argument which was made to the Examiner during the interview and particularly with respect to the Saari et al patent.

The Saari et al patent also teaches a technique for measuring connection time for use, particularly in an ATM network, in determining an appropriate charge for that connection. This technique is so substantially different from the Applicants' present invention that it is of no real relevance.

Nevertheless and specifically, this technique relies on initiating a connection to a node by sending a billing cell, containing connection information, to that node. That specific node then measures the time required for all ATM data cells in the connection to be received at that node. The last cell in the connection is a terminate billing cell which drops the connection to that node. Once

the connection to that node is terminated, the node computes, using, in part, information in the billing cell, the incremental cost associated use of that node. This cost accounts for the connection time through that node as well as the amount of data transferred through that node. Thereafter, to transfer the data from that node to a next successive node in a path through the network, the former node will establish a connection to the latter node and generate and transmit a billing cell to the latter node. The billing cell will contain the total cost of the connection thus far. That next node once it has received all the data will, in turn, calculate an incremental connection cost and add that cost to the information in the billing cell it received and pass the resulting accumulated cost, in a new billing cell, to a next successive node in a path through the network, and so on, until the last node in the path has been reached. The last node will transfer its accumulated billing information to a network billing system in order to bill the entire cost of the connection. See, e.g., col. 3, line 42 et seq; col. 5, line 56 et seq; and col. 6, lines 29-32 of the Saari et al patent.

The Examiner is correct in recognizing, as the only potentially relevant aspect of this patent and the reason for its citation, that ATM system cells can contain connection information which defines desired network capacity or priority requested for a connection by a user, or capacity or priority assigned to that connection by a telecommunications system. However, this teaching has no bearing on measuring the time duration t required for a

fixed number of packets N to be received at or transmitted by a network connection. In that regard, while the duration is clearly influenced by the priority and network bandwidth (network capacity) which the network assigns to that connection -- which collectively influence the speed through which the network will transfer packets for that connection end-to-end through the network, the mere act of including that information within an ATM system cell, as the Saari et al patent teaches, will not, by itself, dictate the duration. Rather, the then-existing operational characteristics of the network will.

Hence, even if one were to combine the teachings of the Corneliusen patent with the relevant teachings in the Saari et al patent to provide a measurement technique, the resulting technique would still rely on measuring, for an ATM connection and as taught the Corneliusen patent, the total time required for the entire connection (however long that connection is from start to finish) along with counting all the packets (cells) that constituted that connection. System packets, as taught by the Saari et al patent, used to establish that connection would contain connection information, including priority and capacity parameters.

Such a system falls far short of and uses a measurement technique that lies directly opposite to that taught by the present Applicants, i.e., to fix the number

of packets and then measure a time duration needed for that number of packets to be received or transmitted through the packet connection.

As indicated above, new independent claim 14 contains a suitable recitation directed at the distinguishing features of the present invention. Hence, this claim is not rendered obvious by the Corneliusen or Saari et al patents, regardless of whether the teachings of those patents are taken singly or in any combination, including that posed by the Examiner. Accordingly, claim 14 is patentable under the provisions of 35 USC § 103.

Each of claims 16, 17, 19 and 20 depends, either directly or indirectly, from claim 14 and recites further distinguishing aspects of the present invention. Accordingly, the Applicants submit that none of these dependent claims is rendered obvious by the teachings of the two applied patents for the same exact reason given above with respect to claim 14. Consequently, each of these dependent claims is also patentable under the provisions of 35 USC § 103.

#### Conclusion

Thus, the Applicants submit that none of the claims, presently in the application, is anticipated under the provisions of 35 USC § 102 or obvious under the provisions of 35 USC § 103. Consequently, the Applicants

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believe that all these claims are presently in condition for allowance.

As such, the Applicants now request that this amendment be entered under the provisions of 37 C.F.R. § 1.116 and earnestly solicit reconsideration of this application and its swift passage to issue.

Respectfully submitted,

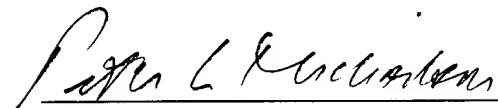
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Peter L. Michaelson  
Peter L. Michaelson, Attorney  
Customer No. 007265  
Reg. No. 30,090  
(732) 530-6671

MICHAELSON & ASSOCIATES  
Counselors at Law  
Parkway 109 Office Center  
328 Newman Springs Road  
P.O. Box 8489  
Red Bank, New Jersey 07701

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I hereby certify that this correspondence is being deposited on **December 6, 2005** with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
Peter L. Michaelson  
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